OBLON, SPIVAK, ET AL
DOCKET #:217746US2SRD
INV: Shuichi OBAYASHI
SHEET 1 OF 12

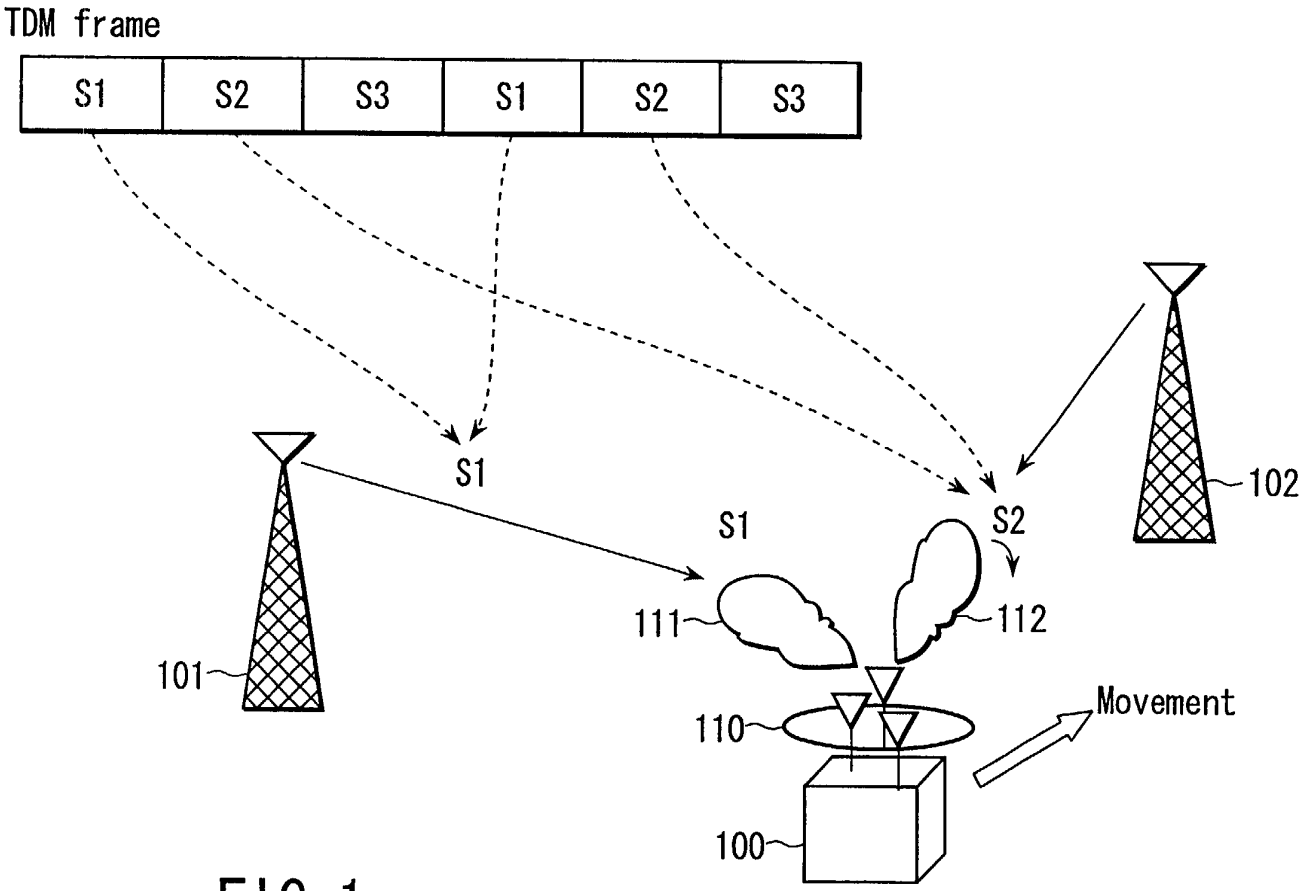

FIG. 1

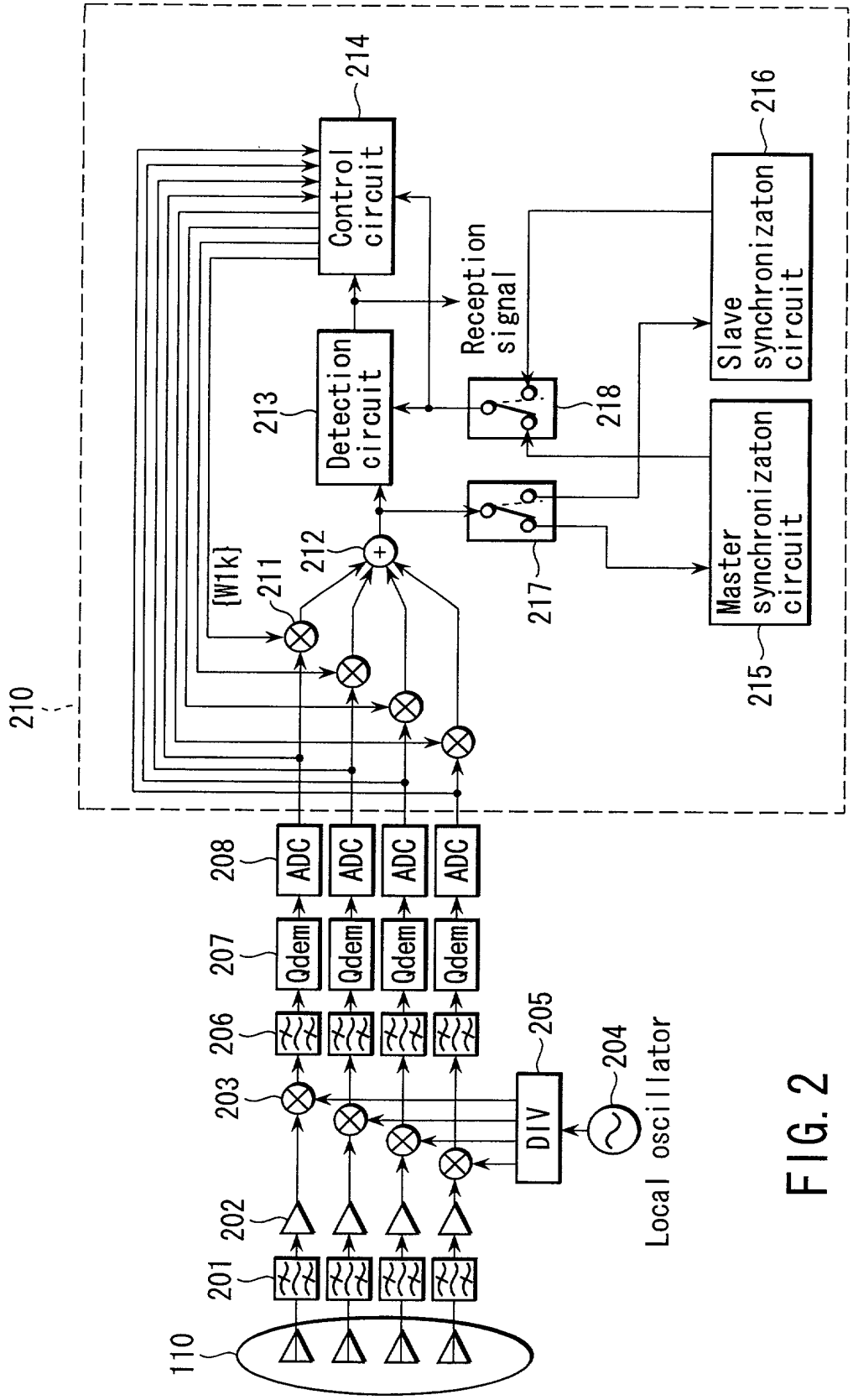
110
201
202
203
204
Local oscillator
205
DIV
206
207
Qdem
208
ADC
210
211
{W1k}
212
213
Detection circuit
214
Control circuit
215
Master synchronizaton circuit
216
Slave synchronizaton circuit
217
218
Reception signal

FIG. 2

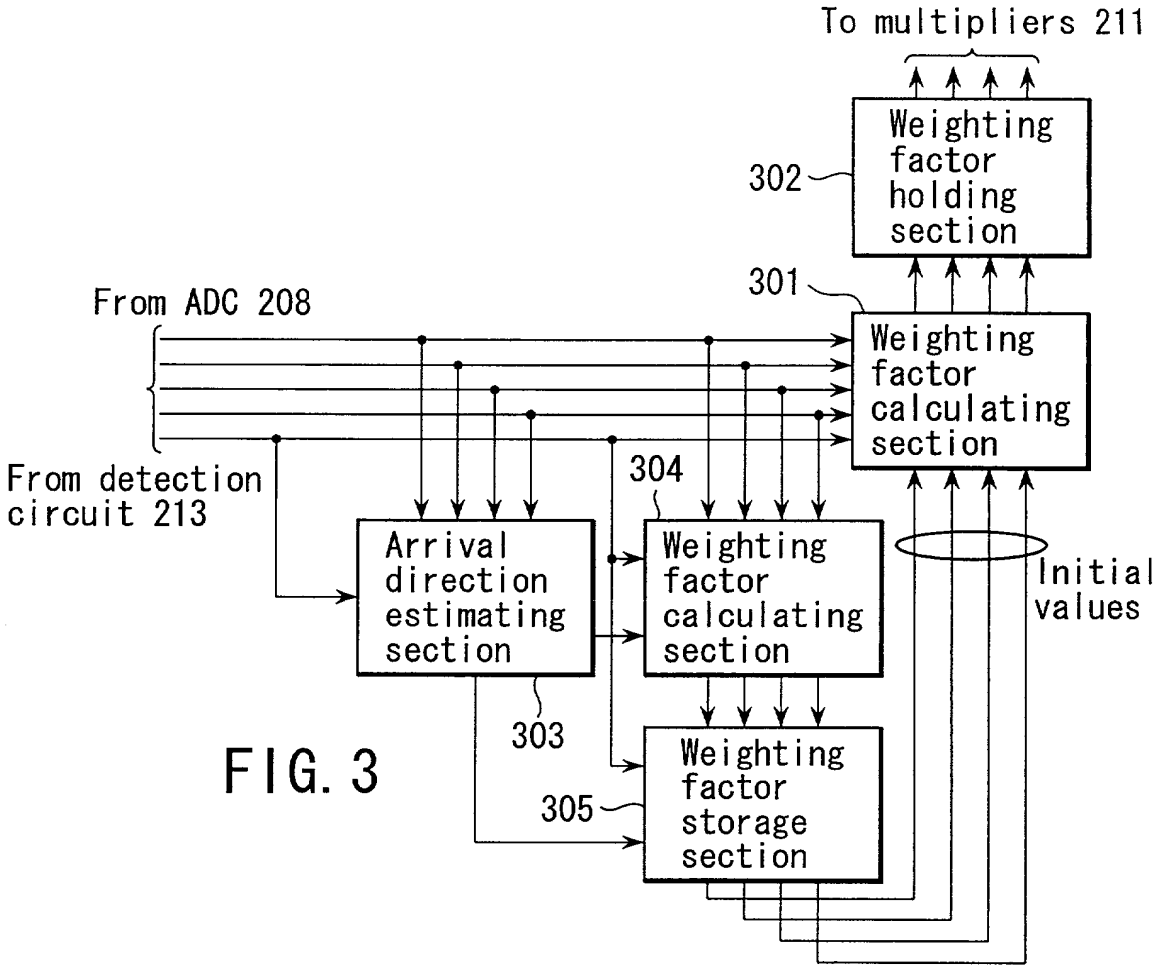

FIG. 3

Arrival direction	Reception level	Weighting factor
⋮	⋮	

FIG. 4

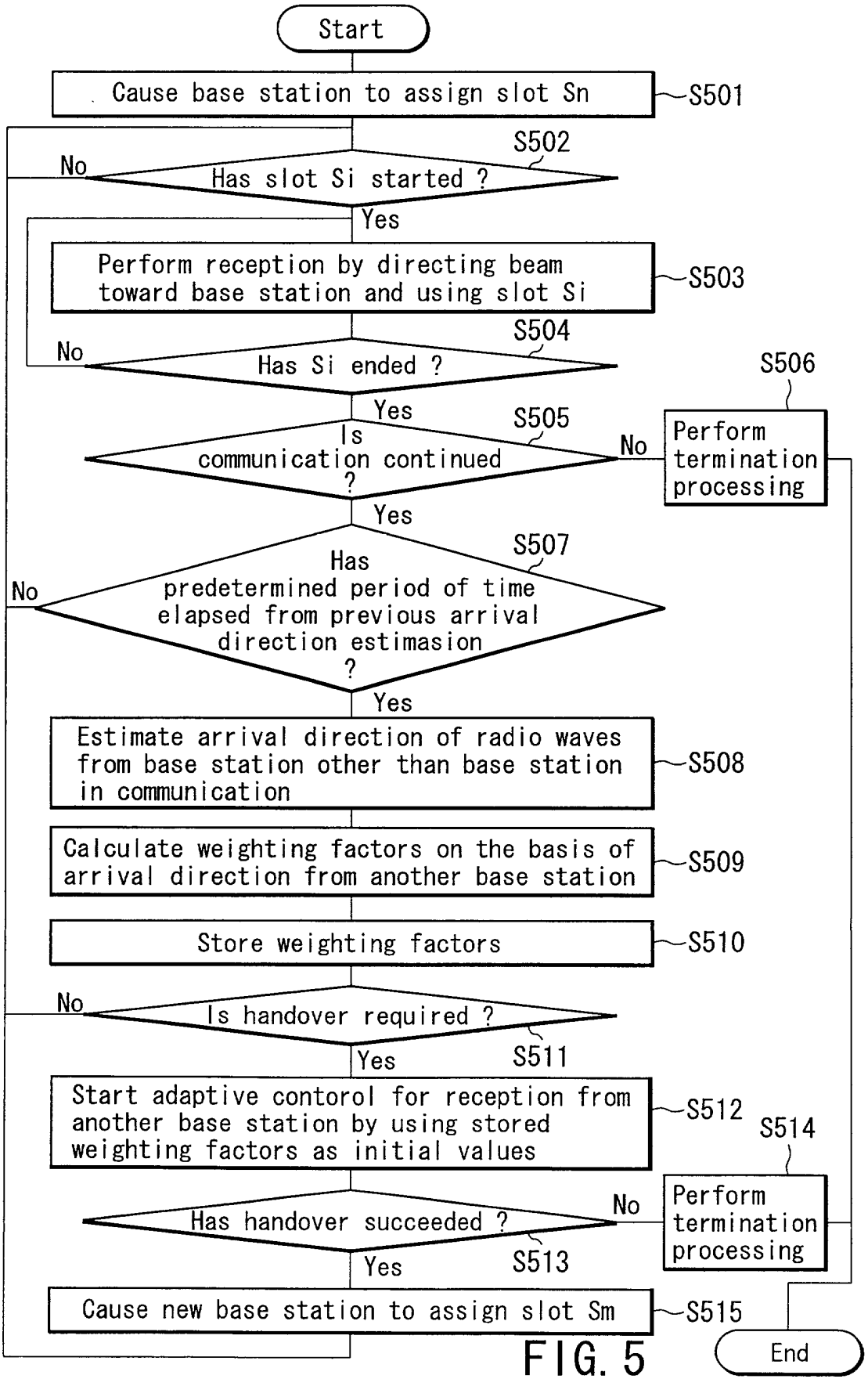
Start
Cause base station to assign slot Sn
S501
S502
No
Has slot Si started ?
Yes
Perform reception by directing beam toward base station and using slot Si
S503
S504
No
Has Si ended ?
Yes
S505
Is communication continued ?
No
S506
Perform termination processing
Yes
S507
Has predetermined period of time elapsed from previous arrival direction estimasion ?
No
Yes
Estimate arrival direction of radio waves from base station other than base station in communication
S508
Calculate weighting factors on the basis of arrival direction from another base station
S509
Store weighting factors
S510
No
Is handover required ?
Yes
S511
Start adaptive contorol for reception from another base station by using stored weighting factors as initial values
S512
S514
Has handover succeeded ?
No
Perform termination processing
Yes
S513
Cause new base station to assign slot Sm
S515
End

FIG. 5

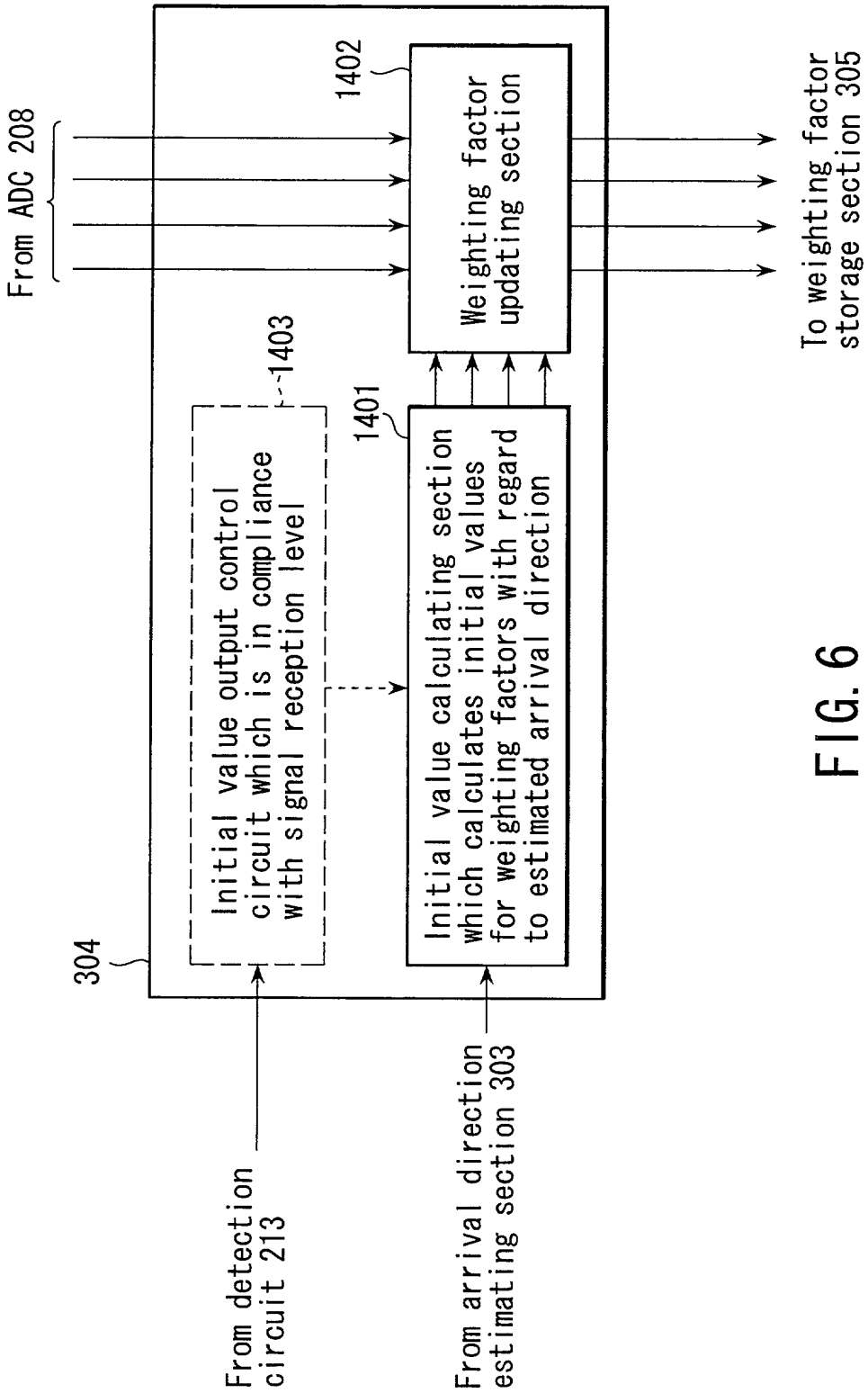
From ADC 208
1402
Weighting factor updating section
To weighting factor storage section 305
1403
Initial value output control circuit which is in compliance with signal reception level
1401
Initial value calculating section which calculates initial values for weighting factors with regard to estimated arrival direction
304
From detection circuit 213
From arrival direction estimating section 303

FIG. 6

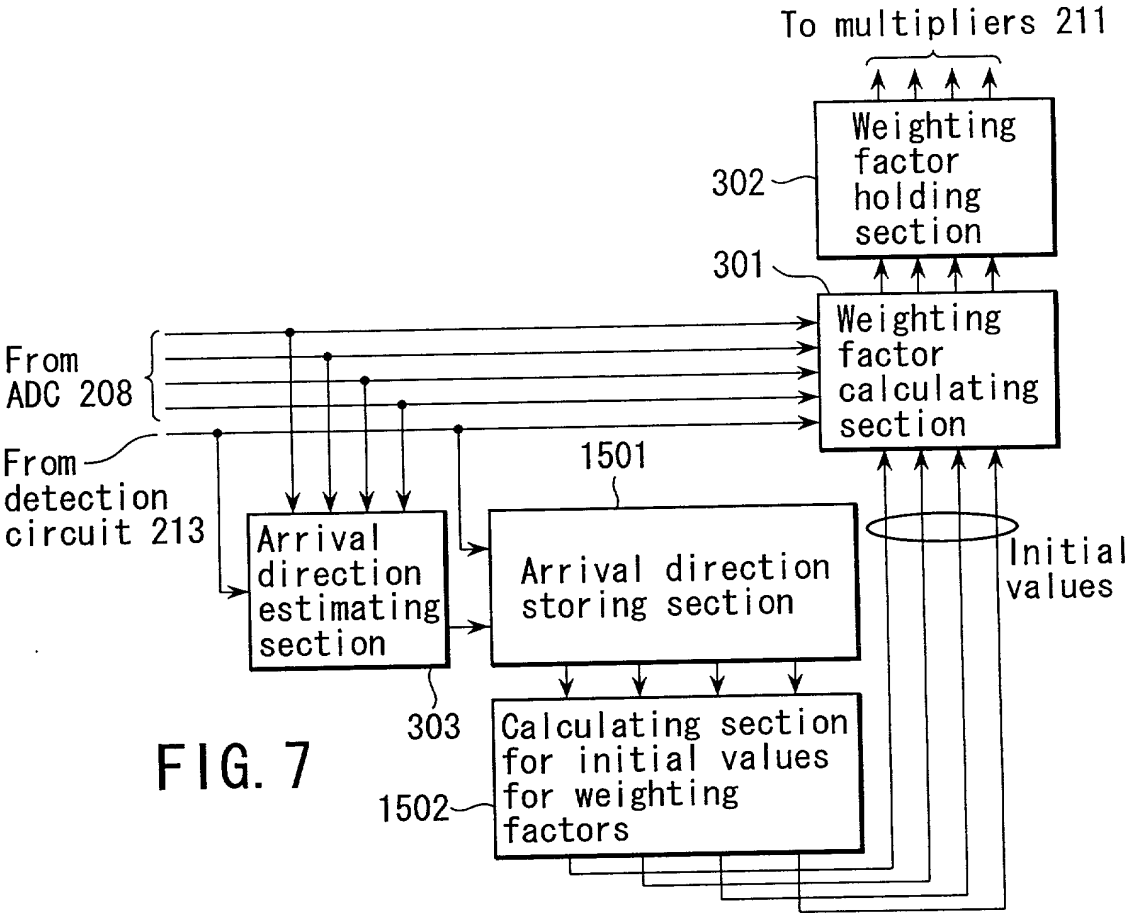
To multipliers 211
Weighting factor holding section
302
301
Weighting factor calculating section
From ADC 208
From detection circuit 213
1501
Arrival direction estimating section
Arrival direction storing section
Initial values
303
Calculating section for initial values for weighting factors
1502

FIG. 7

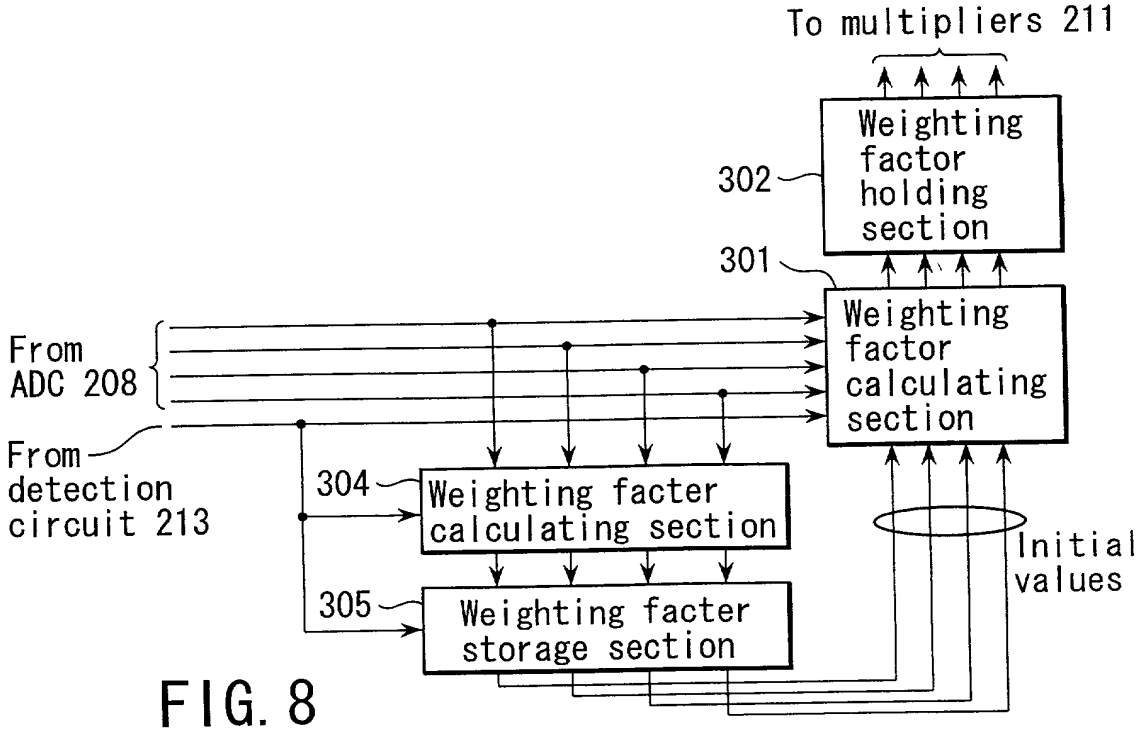
To multipliers 211
Weighting factor holding section
302
301
Weighting factor calculating section
From ADC 208
From detection circuit 213
304
Weighting facter calculating section
305
Weighting facter storage section
Initial values

FIG. 8

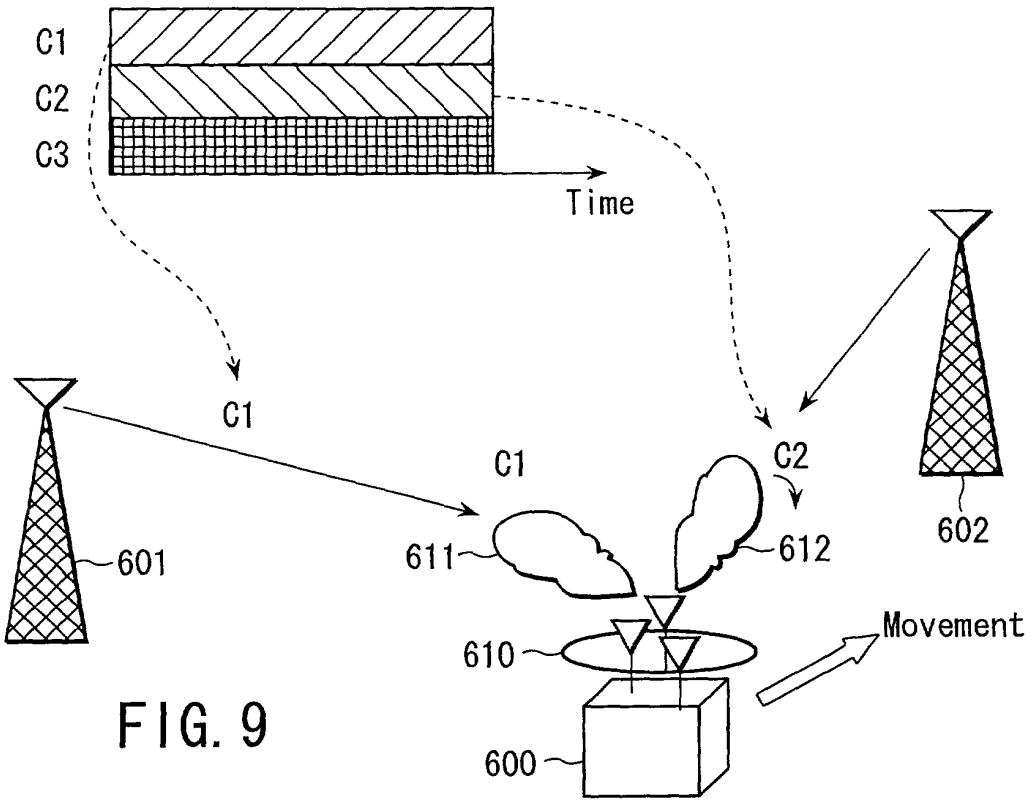

FIG. 9

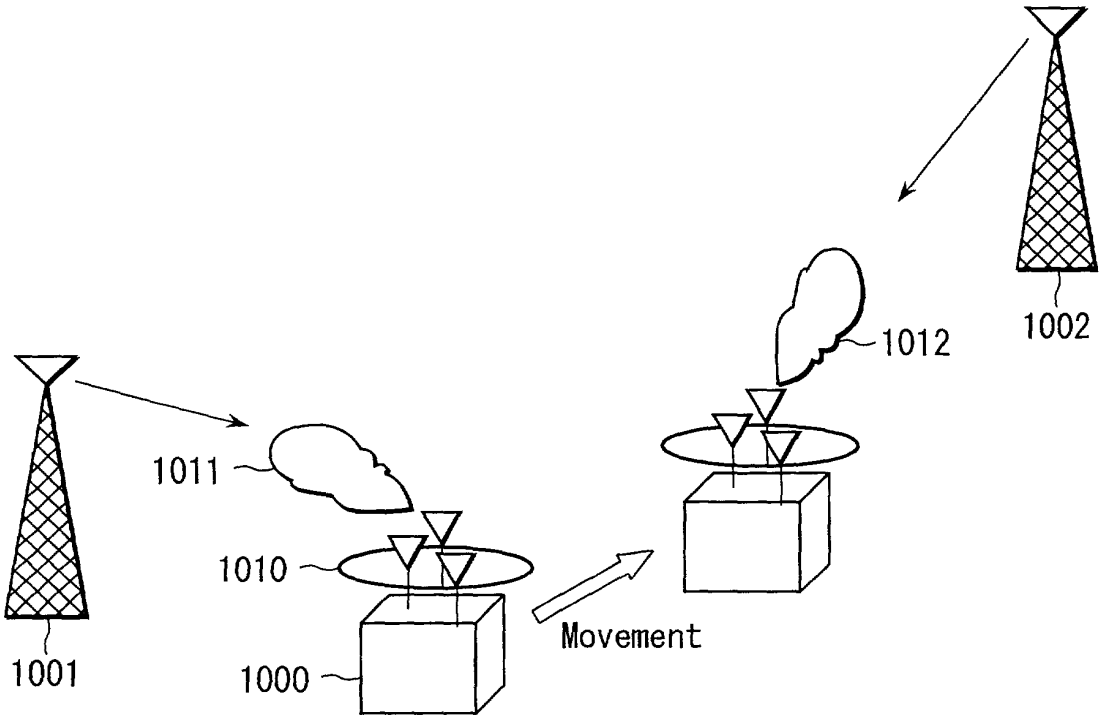

FIG. 16 (PRIOR ART)

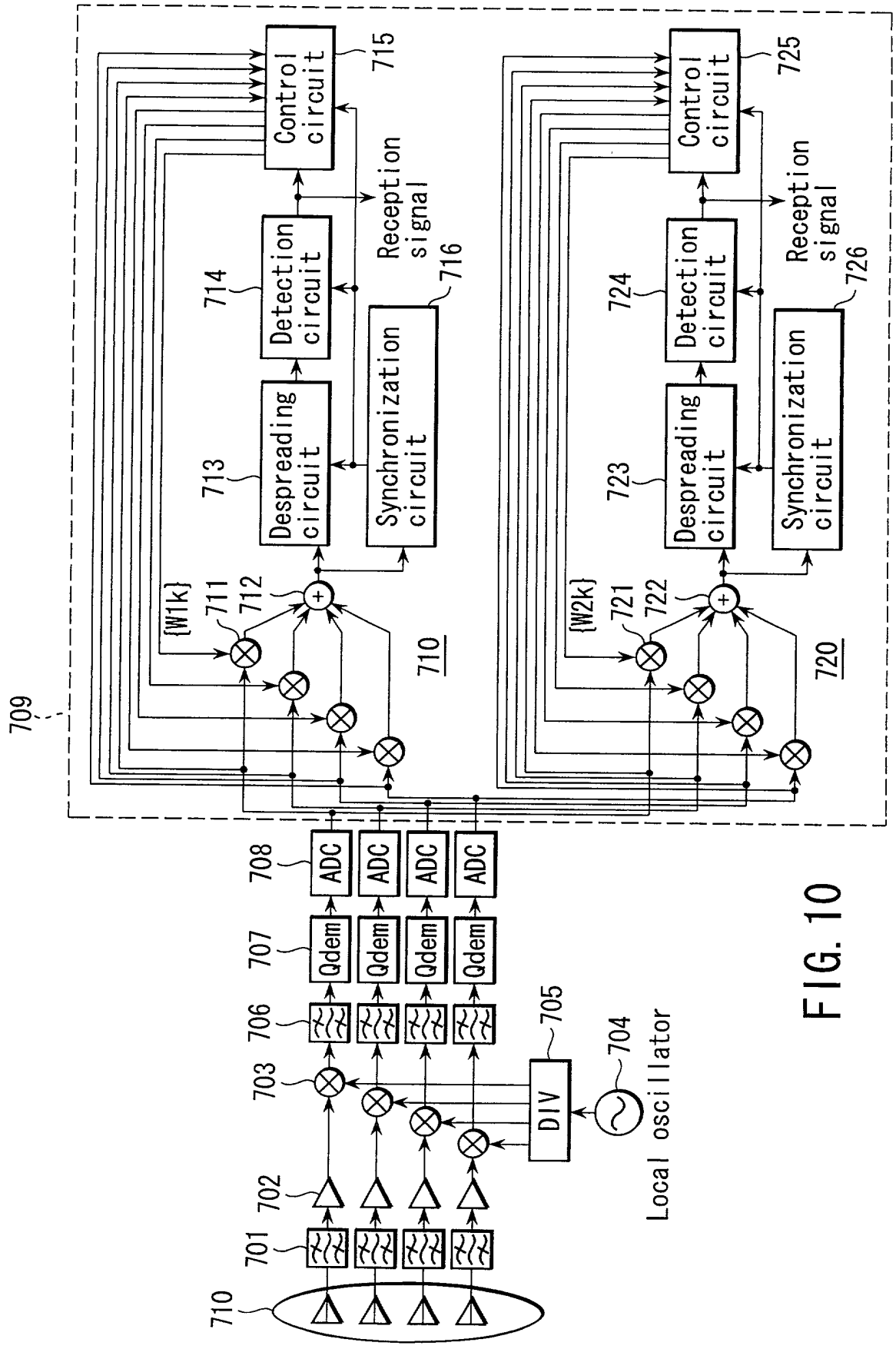
709
710
701
702
703
704
Local oscillator
705
DIV
706
707
Qdem
708
ADC
{W1k}
711
712
713
Despreading circuit
714
Detection circuit
715
Control circuit
716
Reception signal
Synchronization circuit
{W2k}
721
722
723
724
725
726
720

FIG. 10

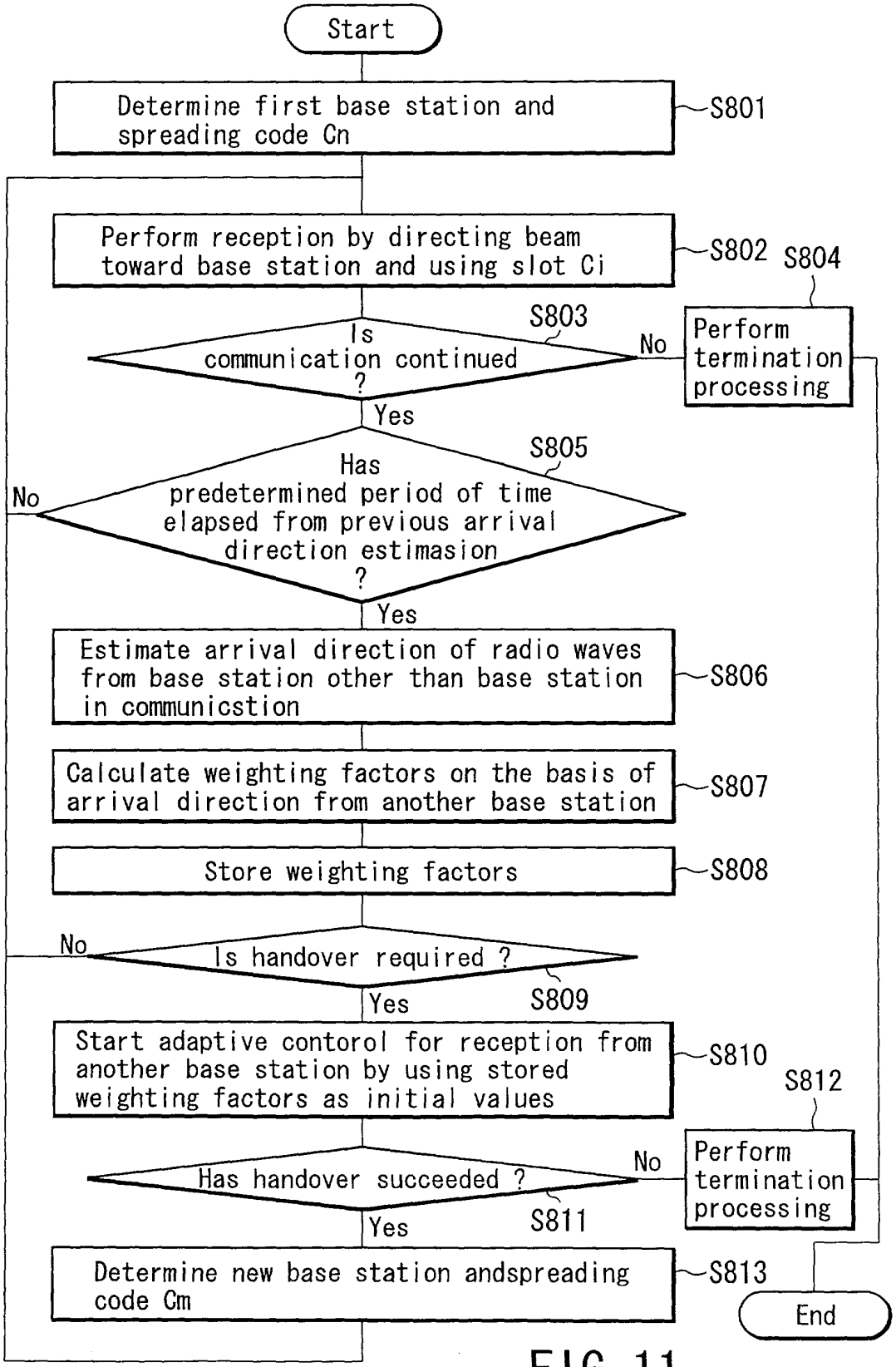
Start
Determine first base station and spreading code Cn
S801
Perform reception by directing beam toward base station and using slot Ci
S802
S804
S803
Is communication continued ?
No
Perform termination processing
Yes
S805
Has predetermined period of time elapsed from previous arrival direction estimasion ?
No
Yes
Estimate arrival direction of radio waves from base station other than base station in communicstion
S806
Calculate weighting factors on the basis of arrival direction from another base station
S807
Store weighting factors
S808
No
Is handover required ?
S809
Yes
Start adaptive contorol for reception from another base station by using stored weighting factors as initial values
S810
S812
Has handover succeeded ?
No
Perform termination processing
S811
Yes
Determine new base station andspreading code Cm
S813
End

FIG. 11

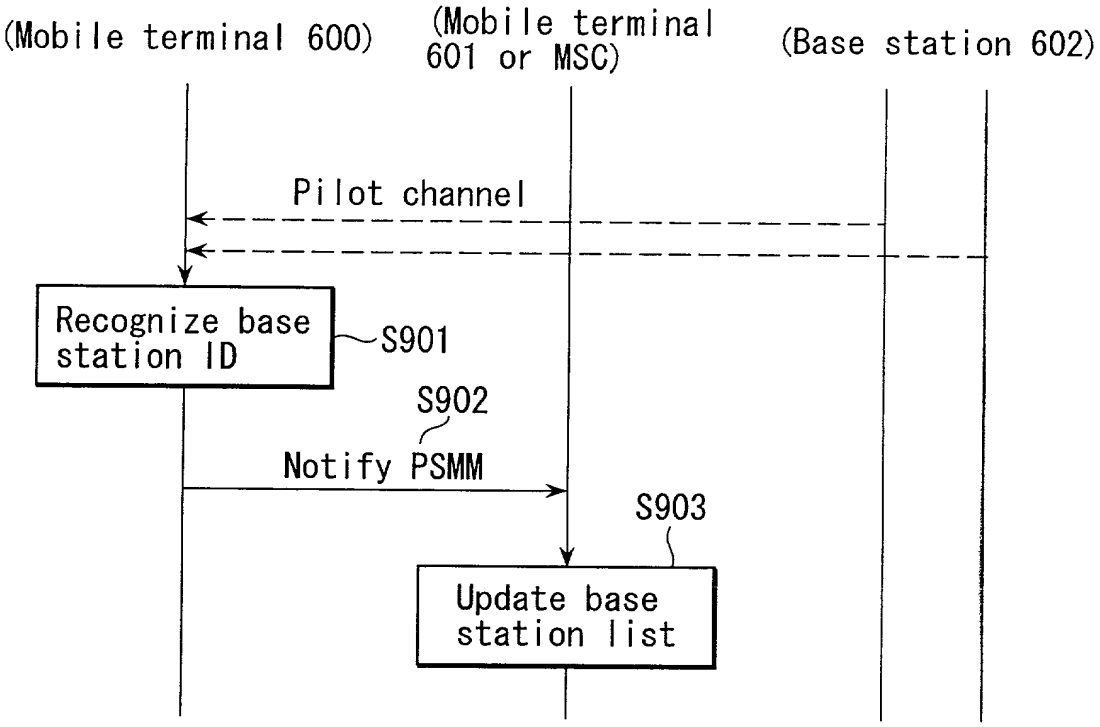

FIG. 12

Terminal ID	Active set	Candidate set	Neighbor set
A	b, d	c	f
B	e	g, s	k, r, q
⋮	⋮	⋮	⋮
N	m, p	h, i	n

FIG. 13

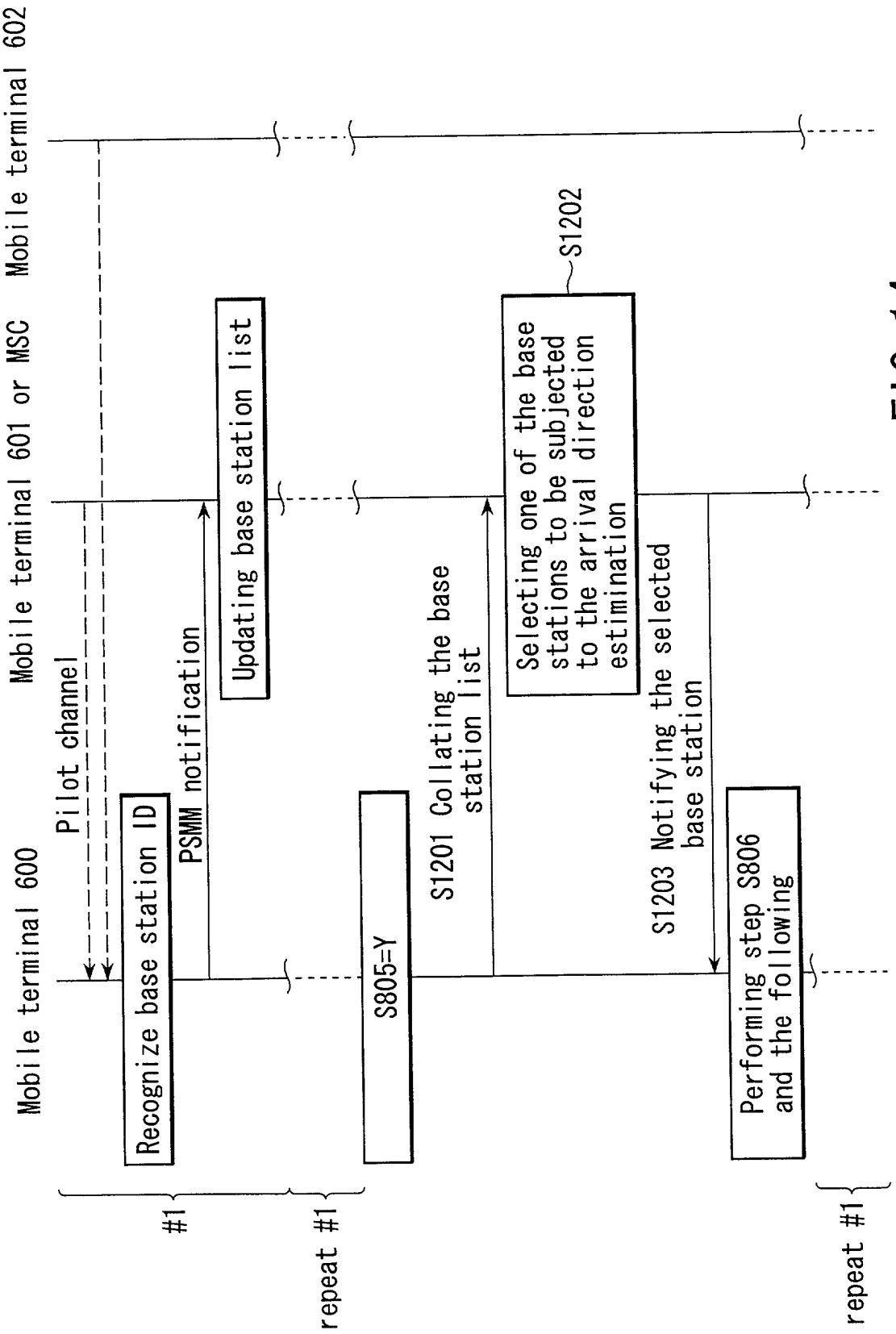
Mobile terminal 600
Mobile terminal 601 or MSC
Mobile terminal 602
Pilot channel
Recognize base station ID
PSMM notification
Updating base station list
S805=Y
S1201 Collating the base station list
S1202
Selecting one of the base stations to be subjected to the arrival direction estimination
S1203 Notifying the selected base station
Performing step S806 and the following
#1
repeat #1
#1
repeat #1

FIG. 14

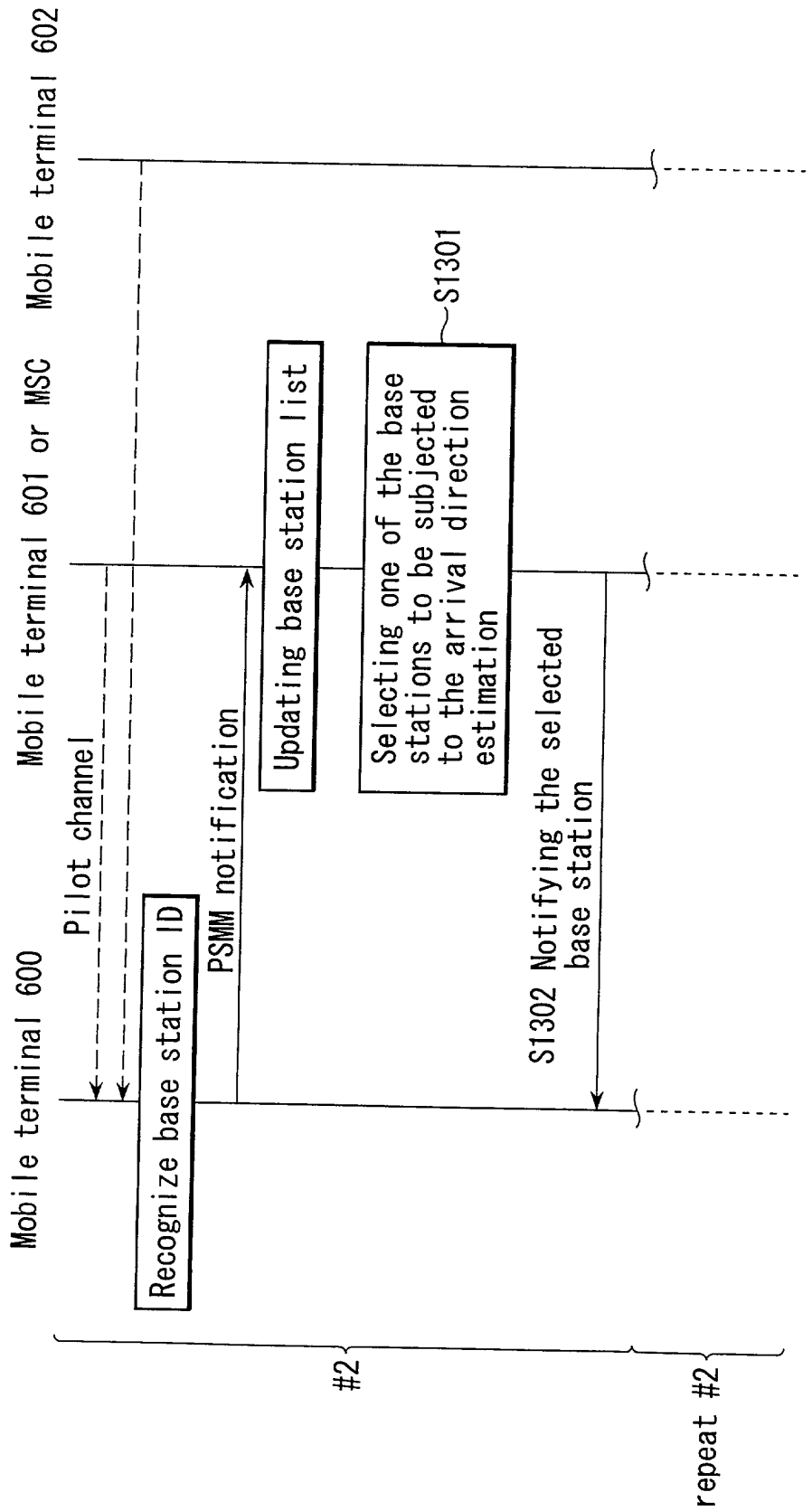
Mobile terminal 600
Mobile terminal 601 or MSC
Mobile terminal 602
Pilot channel
Recognize base station ID
PSMM notification
Updating base station list
S1301
Selecting one of the base stations to be subjected to the arrival direction estimation
S1302 Notifying the selected base station
#2
repeat #2

FIG. 15